

## CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET  
SACRAMENTO, CA 95814-5512



**DATE:** December 07, 2007

**TO:** Interested Parties

**FROM:** Ron Yasny, Compliance Project Manager

**SUBJECT: Gateway Generating Station (formerly Contra Costa Power Plant Unit 8) (00-AFC-1C)  
Staff Analysis of the proposed addition of two water tanks**

On November 15, 2007, Pacific Gas and Electric Company (PG&E) filed a petition with the California Energy Commission requesting approval to add two water tanks at the Gateway Generating Station (formerly known as the Contra Costa Power Plant Unit 8.) Staff prepared an analysis of this proposed change, and a copy is enclosed for your information and review.

The 530-megawatt project was certified by the Energy Commission on May 30, 2001. Construction of the facility started late in 2001 and was suspended in February of 2002 due to financial difficulties. On July 19, 2006, the Energy Commission approved the addition of Pacific Gas and Electric (PG&E) as co-owner of the project with Mirant Delta, LLC. On January 3, 2007, the Energy Commission approved PG&E's petition to remove Mirant as a co-owner and change the name of the facility to the Gateway Generating Station. PG&E restarted construction in February of 2007. The facility is located on Wilbur Avenue, east of the city of Antioch, in Contra Costa County.

PG&E is seeking approval to add two new above ground water tanks: a new 100,000 gallon service water supply tank and a new 40,000 gallon wastewater storage tank. The service water supply tank will eliminate the need to discharge boiler blowdown during certain operating conditions and to allow for the reuse of this water. The wastewater storage tank will reduce wastewater surges to the wastewater discharge lines.

Energy Commission facility design, visual, and water staff reviewed the petition and assessed the impacts of this proposal on environmental quality, public health and safety, and proposes revisions to existing facility design condition of certification GEN-2. It is staff's opinion that, with the implementation of the revised condition, the project will remain in compliance with applicable laws, ordinances, regulations, and standards and that the proposed new water tanks will not result in a significant adverse direct or cumulative impact to the environment (Title 20, California Code of Regulations, Section 1769).

In addition to the facility design analysis attached, visual resource staff believes there will be no adverse impacts because of the modification. Water resource staff believes the change to be beneficial, allowing the use of less potable water. The California Department of Public Health and Safety confirmed there was no possibility of cross connection and contamination of the potable water supply from the modification.

Energy Commission staff reviewed the petition and determined that no other technical areas were affected by the petition.

Interested Parties  
December 3, 2007

Staff intends to recommend approval of the petition at the January 2, 2008 Energy Commission Business Meeting. If you have comments on this proposed modification, please submit them to the following address no later than 5:00 P.M., December 21, 2007:

Ron Yasny, Compliance Project Manager  
California Energy Commission  
1516 9<sup>th</sup> Street, MS-2000  
Sacramento, CA 95814

Comments may be submitted by fax to (916) 654-3882, or by e-mail to [ryasny@energy.state.ca.us](mailto:ryasny@energy.state.ca.us). If you have any questions, please contact me at (916) 653-1227.

For further information on how to participate in this proceeding, please contact the Energy Commission Public Adviser's Office at (916) 654-4489, or toll free in California at (800) 822-6228, or by e-mail at [pao@energy.state.ca.us](mailto:pao@energy.state.ca.us). If you require special accommodations, please contact Lourdes Quiroz at (916) 654-5146. News media inquiries should be directed to Assistant Director, Claudia Chandler, at (916) 654-4989, or by e-mail at [mediaoffice@energy.state.ca.us](mailto:mediaoffice@energy.state.ca.us).

Enclosure: Staff Analysis

**Gateway Generating Station (00-AFC-1C)**  
**Petition to Add Two New Water Tanks**  
**Facility Design Staff Analysis**  
Prepared by: Steve Baker  
December 3, 2007

## **INTRODUCTION**

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During detail design of the project, the project owner's engineer identified a need for two additional water storage tanks:

- ☐ a service water supply tank; and
- ☐ a wastewater storage tank

Because of this, Pacific Gas and Electric Company (PG&E) has petitioned to add two water storage tanks to the project.

### **Service Water Supply Tank**

In the preliminary design, boiler blowdown water was to be collected and stored in the fire water/service water tank for reuse. During detail design, it was realized that corrosion could be caused by this use that would limit the project's ability to reuse water, and thus minimize water usage. The service water supply tank is to be added to the project to allow this blowdown water to be stored for reuse without causing corrosion in the firewater/service water storage system. The required capacity of this new tank is 100,000 gallons. It is 22 feet high and 29 feet in diameter.

### **Wastewater Storage Tank**

During plant startup, a substantial amount of wastewater is generated (approximately 365 gallons per minute for two hours). Releasing this quantity of water to the Delta Diablo Sanitation District's (DDSD's) wastewater treatment facility would require construction of a much larger linear, and would tax DDSD's water treatment facilities. During detail design, it was realized that by installing a storage tank for this wastewater, PG&E can release the water slowly, at a much lower rate. This will not require an increase in the size of the linear, and will not tax DDSD's system. The required capacity of this new tank is 40,000 gallons. It is 18 feet high and 21 feet in diameter.

## **LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)**

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The LORS applicable to facility design of the Gateway Generating Station will not change with this amendment. These LORS include the California Building Standards Code.

## **ANALYSIS**

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At the time PG&E received Energy Commission approval of its petition to change to air cooled condensers (August 1, 2007), detail design of the project had not progressed sufficiently to identify the need for these two water storage tanks.

Both tanks are to be located south of the air cooled condenser, in the same area as the service/fire water and demineralized water storage tanks. Piping associated with these new tanks will not reach offsite. Adding the service water supply tank will allow PG&E to maximize water reuse, thus minimizing water consumption, without suffering corrosion problems that could impact project reliability. Adding the wastewater storage tank will allow PG&E to avoid installing a larger diameter linear to the DDSD wastewater treatment system, and avoid impacts on the DDSD system that would be caused by high flows.

The addition of these tanks will comply with all applicable facility design conditions of certifications and LORS.

## CONCLUSIONS

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The requested modification would not result in adverse environmental impacts, allowing PG&E to operate the project with less impact on water supplies, and with less detrimental impact on the DDSD wastewater treatment system. Modifying Condition of Certification **GEN-2**, as proposed by staff, would acknowledge the two added tanks and would allow future similar modifications to be processed as Insignificant Project Changes. This recommendation is based on the following:

1. I have analyzed the situation from the standpoint of Facility Design, and conclude the addition of these tanks will comply with all applicable facility design conditions of certifications and LORS.
2. I conclude that the amendment is based on new information that was not available during the siting proceedings or during previous amendment proceedings.
3. I conclude that the proposed modification retains the intent of the original Commission Certification.

## PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

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No new mitigation measures would be required. Condition of Certification **GEN-2** must be changed to permit the addition of these tanks.

When the Contra Costa Unit 8 Power Project (since renamed Gateway Generating Station) was certified by the Energy Commission, staff proposed Condition of Certification **GEN-2**, which included **Table 1: Major Equipment List** in the body of the condition. In subsequent siting cases, to avoid the necessity to process a formal amendment whenever equipment was changed, added or deleted, staff has proposed a new Condition of Certification **GEN-2**, in which **Table 1** is part of the Verification portion of the condition. This allows minor changes, such as that requested here, to be processed as an Insignificant Project Change. Therefore staff proposes the replacement of condition **GEN-2** in the Commission Decision for the Contra Costa Unit 8 Power Project. Note that in addition to adding the two new water tanks to **Table 1**, staff's proposed amendment includes modifications to reflect the change of major equipment incorporated in the Dry Cooling Amendment that was approved by the Energy Commission on August 1, 2007.

Delete Condition of Certification **GEN-2** in its entirety, and replace with the following (deleted text is in ~~strike through~~, new text is underlined):

**GEN-2** Prior to submittal of the initial engineering designs for CBO review, the project owner shall furnish to the CPM and to the CBO a schedule of facility design submittals, a Master Drawing List and a Master Specifications List. The schedule shall contain a list of proposed submittal packages of designs, calculations and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM when requested.

**Verification:** At least 60 days (or project owner and CBO approved alternative timeframe) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the Master Drawing List and the Master Specifications List of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in **Facility Design Table 1** below. Major structures and equipment shall be added to or deleted from the table only with CPM approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

**Table 1: Major Equipment List**

Equipment/System	Quantity Plant
Combustion Turbine (CT) Generator	2
Steam Turbine (ST)	1
Generators	3
CTG Step-Up Transformers	2
STG Main Step-Up Transformer	1
CT Inlet Air Filter	2
Inlet Air Cooling	2
Air Compressor	3
Fuel Gas Compressor	1
Fuel Gas Filter – Separator	2
Heat Recovery Steam Generator (HRSG)	2
HRSG Stack	2
Condensate Pump	2
Ammonia Injection Skid	2
Ammonia Storage Tank	1
HP/IP HRSG feedwater pumps	2
<del>Make-up</del> Fire Water Storage Tank	1
Service Water Pumps	2
Demineralized Water Pumps	2
Demineralized Water Treatment Package	1
Demineralized Water Storage Tank	1
Condensate Pump	3
<del>Circulating Water Pumps</del>	<del>3</del>
Condensate Polisher	1
<del>Cooling Tower Bank</del> Air Cooled Condenser (ACC)	1
<del>Fire Water Pump Skid</del>	4
Fire Water Pumps	2
Auxiliary Cooling Water Pumps	2

Equipment/System	Quantity Plant
Plant Air Compressors & Dryers	2
<del>Step-up</del> Main Unit Auxiliary Transformers	2
Service Water Supply Tank	1
Wastewater Storage Tank	1

## REFERENCES

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PG&E 2007 - Petition to Modify the Gateway Generating Station Project Final Decision to Add Two New Tanks, Pacific Gas & Electric, CH2MHILL Sacramento California, November 14, 2007.

CEC 2007 –Commission Order Amending the Energy Commission Decision for the Gateway Generating Station to Eliminate the Use of San Joaquin River Water As The Cooling Water Source and Ten Associated project Design Changes, California Energy Commission, Sacramento, California, August 1, 2000.